Agrium
Conda Phosphate Operations

Agrium's Response to
EPA's Letter Dated August 31, 2005

Agrium asserts a claim of confidentiality with respect to the information contained herein. The information to which this confidentiality claim applies constitutes trade secret, privileged or confidential commercial or financial information, and/or information specifically exempted from disclosure by statute. Such information has been maintained in confidence by Agrium and is not reasonably obtainable by use of legitimate means without Agrium's consent, and Agrium intends to continue its existing practice of protecting the confidentiality of all information subject to this claim of confidentiality.

Public disclosure of the information for which Agrium asserts this confidentiality claim would cause substantial harm to Agrium's competitive position. Furthermore, the information to which this claim applies does not constitute emission data, standards or limitations within the meaning of Clean Air Act §114(c), or other similar relevant federal and/or state provisions. This information includes commercial and/or financial-related information regarding confidential, commercially valuable plans, processes or devices. Because Agrium's business is highly competitive in nature, the disclosure of any such information would substantially harm Agrium's business position by depriving it of an advantage inherent in such information, and/or by providing Agrium's competitors with the ability to derive a benefit from such information to Agrium's detriment. For example, certain information to which this claim applies potentially could be used by Agrium's competitors to project Agrium's future production and/or pricing patterns, to gain insight into Agrium's proprietary process designs and/or production and marketing strategies, and/or to negatively influence public/consumer perceptions of Agrium and Agrium products.

In the event that EPA, or the Idaho Department of Environmental Quality ("IDEQ") receives a request for public disclosure of any information contained herein, Agrium requests that EPA and/or IDEQ notify Agrium immediately upon receiving any such request, notify Agrium of any determination by EPA and/or IDEQ with respect to the confidentiality of such information, and provide Agrium an opportunity to comment regarding any such EPA/IDEQ determination prior to the public disclosure of the requested information.

AGRIUM/CONDA
CBI Document Production Index
in Response to 8/31/05 EPA Info. Request

BATES PREFIX	BEG BATES	END BATES	DATE	DOC TYPE	AUTHOR	RECIPIENT	DESCRIPTION
AGR-CBI	000721	000721		File Cover			File cover sheet, "Dry Products Granulation" (documents located at AGR-CBI 000721-001171)
AGR-CBI	000722	000722		File Cover			Sub-File cover sheet, "Shut Downs" (documents located at AGR-CBI 000722-000776)
AGR-CBI	000723	000726	6/4/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down of the Scrubber System
AGR-CBI	000727	000729	6/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down of the Dry System
AGR-CBI	000730	000732	6/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down fro Map and 16-20-0
AGR-CBI	000733	000734	3/21/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Emergency Shut Down of Loading and Unloading Ammonia Railcars and Trucks
AGR-CBI	000735	000740	5/20/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Emergency Shut Down for Map and 16-20-0
AGR-CBI	000741	000743	3/31/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Shutdown of Bulk Flow Cooler Blower
AGR-CBI	000744	000747	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down for Map and 16-20-0
AGR-CBI	000748	000751	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down of the Dry System
AGR-CBI	000752	000756	8/18/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Normal Shut Down for Map and 16-20-0
AGR-CBI	000757	000761	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down of the Scrubber System
AGR-CBI	000762	000764	3/21/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Emergency Shut Down of Loading and Unloading Ammonia Railcars and Trucks
AGR-CBI	000765	000770	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Emergency Shut Down for Map and 16-20-0
AGR-CBI	000771	000773	8/10/2004	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Normal Shut Down for Map and Back Titration
AGR-CBI	000774	000776	8/10/2004	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Long Term Shut Down for Map with Bak Titration
AGR-CBI	000777	000777		File Cover			Sub-File cover sheet, "Start-Ups" (documents located at AGR-CBI 000777-000830)

AGRIUM/CONDA
CBI Document Production Index
in Response to 8/31/05 EPA Info. Request

BATES PREFIX	BEG BATES	END BATES	DATE	DOC TYPE	AUTHOR	RECIPIENT	DESCRIPTION
AGR-CBI	000778	000780	8/18/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Starting the Ammonia Pumps
AGR-CBI	000781	000783	3/31/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Starting the Bulk Flow Cooler Blower
AGR-CBI	000784	000790	8/18/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Normal Start-up for Map and 16-20-0
AGR-CBI	000791	000796	8/18/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-Up After Turn Around of the Ammonia From the Ammonia Sphere to the Ammonia
AGR-CBI	000797	000803	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-UP After Turn Around fro Map and 16-20-0
AGR-CBI	000804	000807	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-Up after Turn Around of Ammonia Vaporizer
AGR-CBI	000808	000813	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-Up after Turn Around of Dry System
AGR-CBI	000814	000817	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-Up after Turn Around of Dryer Scrubber
AGR-CBI	000818	000821	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-Up after Turn Around of Wastewater System
AGR-CBI	000822	000825	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Start-Up after Turn Around of Granulator
AGR-CBI	000826	000830	8/10/2004	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Normal Start-up for Map with Back Titration

Dry Products
Granulation

Shut Downs

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN OF THE SCRUBBER SYSTEM

Granulation All Operators-01

6/4/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to perform a Long Term Shut Down Of The Scrubber System.

Requirements All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.**		• **The scrubber system must stay in service until the dry system and the ammonia system has been shut down**

TASKS:

1. Opening and closing valves.
2. Removing and installing blanks.

Steps		Key Points	PPE/Hazards
1.	Open the fresh water valve (2" gate valve) to the dryer scrubber pump tank and start filling it.		
2.	Open the preneutralizer transfer pump valve (4" plug valve) to the preneutralizer tank and start filling it with wash water.		
3.	Close the preneutralizer transfer pump valve (4" plug valve) on the circulation line back to the dryer scrubber pump tank.		
4.	Open the water to the preneutralizer tank auto valve to help fill it with wash water.		
5.	When the preneutralizer tank reaches the desired level, close the preneutralizer transfer pump line valve (4" diaphragm valve) to the preneutralizer tank.		
6.	Close the water to the preneutralizer tank auto valve.		
7.	Open the preneutralizer transfer pump circulation line valve (4" plug valve) back to the dryer scrubber pump tank.		
8.	Close the water valve (2" gate valve) to the dryer scrubber pump tank.		
9.	Open the drain valve to the wastewater tank.		
10.	Close the preneutralizer transfer pump circulation valve (4" diaphragm valve) to the dryer scrubber pump tank and start draining the scrubber pump tanks.		
11.	When the dryer scrubber pump tank level reaches the suction line of the circulation pump, shut the dryer circulation pump down.		

Long Term Shut Down Of The Scrubber System

Steps		Key Points	PPE/Hazards
12.	When the dryer scrubber pump tank goes empty, shut the dryer scrubber transfer pump down. Whichever one is in service.		
13.	Open the dryer scrubber pump tank valve (8" knife valve) to the suction side of transfer pumps, whichever one is out of service and drain the remaining water out of pump tank.		
14.	When the granulator scrubber pump tank level reaches the scrubber pump suction line, shut down the granulator scrubber circulation pump.		
15.	When the granulator scrubber pump tank goes empty, shut down the preneutralizer transfer pump.		
16.	Open the granulator scrubber pump tank valve (8" knife valve) to suction side of the preneutralizer tank transfer pump, whichever one is not in service and drain the remaining water out of the pump tank.		
17.	Close the 125# steam valve (2" gate valve) going to the preneutralizer tank ammonia sparges.		
18.	Open the drain valve (3" plug valve) on the bottom of the preneutralizer tank and start draining the preneutralizer tank.		
19.	When the preneutralizer tank goes empty, shut the preneutralizer slurry circulation pump down. Which ever pump is in service.		
20.	Open the drain valve (3" plug valve) on the suction side of the preneutralizer circulation pumps.		
21.	Shut down the Pipe Cross Reactor feed pump whichever one is in service.		
22.	Open the drain valve (2" plug valve) on the suction side of the Pipe Cross Reactor feed pumps.		

Steps		Key Points	PPE/Hazards
23.	Close the water valve (¾" gate valve) to the dryer fan.		
24.	Shut the dryer fan down.		
25.	Shut down the granulator fan.		
26.	Shut down the granulator fan bearing oiling system.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN OF THE DRY SYSTEM

Granulation All Operators-01
6/3/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to perform Long Term Shut Down Of The Dry System.

Requirements All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.**		• **The scrubber system must still be in service while shutting down the dry system**

TASKS:

1. Shutting down equipment

	Steps	Key Points	PPE/Hazards
1.	Shut the dryer fire off.		
2.	Insert rubber belting in all 4 screens.		
3.	Set the auto speed controller in manual and set the speed on the product weigh belt at the desired speed to empty out the dry system.		
4.	Put the cooler feed belt in reverse to bypass the cooler while dumping the dry system.		
5.	When the dry system runs empty, verify that the interlocks are enabled.		
6.	Shut down the dry system by clicking on the dry system shut down which will systematically shut down the: ⇒ #70 screw. ⇒ Transfer conveyor. ⇒ Dryer elevator. ⇒ Dryer discharge conveyor. ⇒ Dryer. ⇒ Recycle elevator. ⇒ #2 drag flight. ⇒ Clean-up elevator ⇒ Fines conveyor. ⇒ #1 drag.		

NOTE

THE GRANULATOR IS NOT INTERLOCKED TO ANY OTHER PIECE OF EQUIPMENT AND MUST BE SHUT DOWN AT THE LOCAL STATION

7.	Shut the granulator down.		
8.	Shut down the product weigh conveyor.		

Long Term Shut Down Of The Dry System

Steps		Key Points	PPE/Hazards
9.	Shut down the cooler feed belt.		
10.	After the bulk flow cooler is empty shut down the ribbon blender.		

NOTE

THE BAG HOUSE SCREW MUST BE LEFT RUNNING UNTIL THE BAG HOUSE IS EMPTY

11.	Shut down bag house screw.		
12.	After the bag house goes empty, close the air valve to the pulse timer, turn the pulse timer switch to the off position and close the air valve to the trick gate vibrater.		
13.	Shut down vibrating screens.		
14.	Shut down cage mills.		
15.	Shut down the vent bag house fan.		
16.	Shut down the dryer cyclone screws.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN FOR MAP AND 16-20-0

Granulation All Operators-01
6/3/03

Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to perform Long Term Shut Down For MAP and 16-20-0.

Requirements All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required**		

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber pump tank is at the desired level.		
2.	Verify that the granulator scrubber pump tank is at the desired level.		
3.	Verify that the preneutralizer tank is at the desired level indicated.		
4.	If there is vapor ammonia going to the scrubbers, close the discharge valve on the discharge side of the auto controller.		
5.	Close the vapor ammonia valve (2" ball valve) going to the dryer scrubber.		
6.	Close the vapor ammonia valve (2" ball valve) going to the granulator scrubber.		
7.	Call the phos acid plant and have them shut down the 42% feed pump or shut it down and call them and tell them that it has been shut down		

NOTE

AT THIS POINT IF THE PLANT IS RUNNING 16-20-0 OR IF SULFURIC ACID IS BEING USED FOR GRADE CONTROL FOR MAP, SHUT THE SULFURIC ACID AND THE WATER OFF GOING TO THE PRENEUTRALIZER TANK

8.	Close the sulfuric acid valve (2" gate valve) on the incoming line.		
9.	Close the vapor ammonia to the preneutralizer tank valve. (8" globe valve)		
10.	Close the scrubber liquor to the preneutralizer tank valve. (4" plug valve) and open the valve (4" plug valve) on the circulation line.		

Steps		Key Points	PPE/Hazards
11.	When the preneutralizer tank goes empty, take the Pipe Cross Reactor out of service by clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.		

NOTE

AT THIS POINT THE PRENEUTRALIZER TANK AND THE SCRUBBERS CAN BE PUT ON WASH. REFER TO THE PROCEDURE LONG TERM SHUT DOWN OF THE SCRUBBER SYSTEM

12.	Put the vapor ammonia to the Pipe Cross Reactor controller in manual and set it at 0%.		
13.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.		
14.	Monitor the granulator until the discharge product is dry and then shut the 250# steam valve.		
15.	Shut the ammonia pump off and close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.		
16.	Monitor the granulator until the discharge product is dry.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

EMERGENCY SHUT DOWN OF LOADING AND UNLOADING AMMONIA RAILCARS AND TRUCKS

Granulation "C" Operator-01
3/21/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to perform an emergency shut down of the ammonia loading and unload system for railcars and trucks.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required • Safety glasses	• Possible ammonia exposure	• Possible ammonia release

TASKS:

1. Closing valves.

Steps	Key Points	PPE/Hazards
NOTE **THIS PROCEDURE WILL COVER A RUPTURED HOSE, POWER OUTAGE AND THE LOSS OF INSTRUMENT AIR**		
1. In the event of a ruptured hose, and the operator can not get to the ammonia valves to close them, evacuate the area and call the emergency #333 and have the emergency response team address the issue.	Shut the ammonia unloading compressor or the ammonia pump, which ever is being used down.	Possible ammonia release.
2. If there is a power failure, close the ammonia vapor ammonia liquid valves on the railcar or truck, on the ammonia unloading loading station and by the ammonia-unloading compressor.		
3. If there is a loss of instrument air, close the ammonia vapor and ammonia liquid valves on the railcar or truck, on the ammonia unloading loading station and by the ammonia-unloading compressor.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

EMERGENCY SHUT DOWN FOR MAP AND 16-20-0

Granulation All Operators-01
05/20/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to perform an Emergency Shut Down.

Requirements: All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.**		

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	**Identify the emergency.**		
2.	**If an operator error occurs** (we all make mistakes) and the error can't be corrected on the go use the normal shutdown procedures.		
3.	After the problem has been corrected, start up using the normal start-up procedure.		
4.	**If a piece of equipment fails** it will either trip or be identified by high amps or low amps. If it trips out it will shut the rest of the interlocked equipment down, then the flows will need to be taken out of the granulator by: clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.		
5.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.		
6.	Complete the shut down using the Normal shut down procedure.		
7.	After the problem has been corrected follow the normal star-up procedures.		

Steps	Key Points	PPE/Hazards

NOTE

IF A LEAK OR SPILL OF PHOSPHORIC ACID, SULFURIC ACID OR A RELEASE OF AMMONIA IS LARGE ENOUGH, THE EMERGENCY SYSTEM MUST BE ACTIVATED AND THE ENVIRONMENTAL DEPARTMENT MUST BE NOTIFIED.

8.	**If an ammonia line fails:** Turn the emergency shut off switch to the off position.		
9.	Shut the ammonia pump down.		

NOTE

USE THE NORMAL SHUTDOWN PROCEDURE TO COMPLETE THE SHUT DOWN.

10.	Isolate the failed line.		
11.	Steam purge the failed ammonia line.		
12.	Close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.		
13.	After the line has been repaired and tested: turn the safety switch to the open position.		

Steps	Key Points	PPE/Hazards

NOTE
AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

14.	Start the ammonia pump.	Refer to the procedure Starting ammonia pumps.	

NOTE
START UP USING THE NORMAL STAR-UP PROCEDURES.

15.	**If there is a Failed phos acid line,** shut the 42% acid pump down and call phos acid and tell them that the pump is down.	Communicate with the Phos Dept. and have them blow line out with plant air.	

NOTE
FOLLOW THE NORMAL SHUTDOWN PROCEDURE.

16.	Isolate the bad section of the line.		
17.	After the line has been repaired follow the Normal start-up procedure.		
18.	**If there is a Failed sulfuric acid line,** Call the phos plant and have them close the sulfuric acid valve to the granulation plant.		
19.	If using the sulfuric acid for 16-20-0, use the normal shut down procedure to shut the plant down.		
20.	After the repairs have been made use the Normal star-up procedure.		

Steps	Key Points	PPE/Hazards

NOTE

FOLLOW THE NORMAL SHUTDOWN PROCEDURE.

21.	After the line has been repaired follow the Normal start-up procedure.		
22.	**If a full Power Failure** occurs all electrical equipment will go down. All slurry lines will need to be steamed out.		
23.	Close the vapor ammonia auto controller to the Pipe Cross Reactor.		
24.	Open the Pipe Cross Reactor drain block valve (3" plug valve) to the wastewater tank.		
25.	Open the 250# steam valve (4" plug valve) to the Pipe Cross Reactor.		
26.	Close the vapor ammonia valve (8" globe valve) to the preneut-tank.		
27.	Close the scrubber liquor to the preneut-tank (4" plug valve).		
28.	Close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.		
29.	Close the suction side valve (6" plug valve) to the slurry circulation pump that is in service.		
30.	Open the drain valve (2" plug valve) on the slurry circulation pump suction line to the pump that is in service.		
31.	Close the valve (6" plug valve) on the suction side of the Pipe Cross Reactor feed pump that is in service.		

	Steps	Key Points	PPE/Hazards
32.	Open the drain valve (2" plug valve) on the suction line to the Pipe Cross Reactor feed pump that is in service.		

NOTE

WHEN THE POWER COMES ON FOLLOW THE NORMAL START-UP PROCEDURES.

33.	**If a pump fails** and the plant can't continue to run with out it. Follow the Normal shutdown procedure.		
34.	Isolate the pump.		
35.	After the repairs have been made, follow the Normal start-up procedures.		
36.	**If a motor fails** on a piece of equipment and the plant can't run with out it, follow the Normal shut down procedure.		
37.	After the repairs have been made, follow the Normal start-up procedures.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

SHUTDOWN OF THE BULK FLOW COOLER BLOWER

Granulation "B" Operator-01
3/31/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Shutdown The Bulk Flow Cooler Blower.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as required.**		

TASKS:

1. Shut down the bulk flow cooler motor.
2. Open and close valves.

Steps		Key Points	PPE/Hazards
1.	Shut down the bulk flow cooler blower motor.		
2.	Close the blower inlet and outlet valves to prevent anything from entering the blower housing.		
3.	Open the small drain valve on the bottom of the discharge header to drain any condensate that may collect.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN FOR MAP AND 16-20-0

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform Long Term Shut Down For MAP and 16-20-0.

Requirements Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as	• Exposure to ammonia • Contact with sulfuric acid	• Ammonia Release

required		

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber pump tank is at the desired level.	"A" operator will perform this task.	
2.	Verify that the granulator scrubber pump tank is at the desired level.	"A" operator will perform this task.	
3.	Verify that the preneutralizer tank is at the desired level indicated.	"A" operator will perform this task.	
4.	If there is vapor ammonia going to the scrubbers, close the discharge valve on the discharge side of the auto controller.	"B" operator will perform this task.	
5.	Close the vapor ammonia valve (2" ball valve) going to the dryer scrubber.	"B" operator will perform this task.	
6.	Close the vapor ammonia valve (2" ball valve) going to the granulator scrubber.	"B" operator will perform this task.	
7.	Call the phos acid plant and have them shut down the 42% feed pump or shut it down and call them and tell them that it has been shut down	"A" operator will perform this task.	
8.	Call PPA and have them shut down the Fertilizer Feed Stock coming to the granulation plant.	"A" operator will perform this task.	

NOTE

AT THIS POINT IF THE PLANT IS RUNNING 16-20-0 OR IF SULFURIC ACID IS BEING USED FOR GRADE CONTROL FOR MAP, SHUT THE SULFURIC ACID AND THE WATER OFF GOING TO THE PRENEUTRALIZER TANK

9.	Close the sulfuric acid valve (2" gate valve) on the incoming line.	"B" operator will perform this task	
10.	Close the vapor ammonia to the preneutralizer tank valve. (8" globe valve)	"B" operator will perform this task.	
11.	Close the scrubber liquor to the preneutralizer tank valve. (4" plug	"B" operator will perform this task	

	valve) and open the valve (4" plug valve) on the circulation line.		

Steps		Key Points	PPE/Hazards
12.	When the preneutralizer tank goes empty, take the Pipe Cross Reactor out of service by clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.	"A" operator will perform this task.	

NOTE

AT THIS POINT THE PRENEUTRALIZER TANK AND THE SCRUBBERS CAN BE PUT ON WASH. REFER TO THE PROCEDURE LONG TERM SHUT DOWN OF THE SCRUBBER SYSTEM

13.	Put the vapor ammonia to the Pipe Cross Reactor controller in manual and set it at 0%.	"A" operator will perform this task.	
14.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.	"A" operator will perform this task.	
15.	Monitor the granulator until the discharge product is dry and then shut the 250# steam valve.	"A" operator will perform this task.	
16.	Shut the ammonia pump off and close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.	"A" operator will perform this task.	
17.	Monitor the granulator until the discharge product is dry.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN OF THE DRY SYSTEM

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform Long Term Shut Down Of The Dry System.

Requirements Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as		• The scrubber system must still be in service while shutting down the dry system

required.		

TASKS:

1. Shutting down equipment

Steps		Key Points	PPE/Hazards
1.	Shut the dryer fire off.	"A" operator will perform this task.	
2.	Insert rubber belting in all 4 screens.	"B" and "C" operator will perform this task.	
3.	Set the auto speed controller in manual and set the speed on the product weigh belt at the desired speed to empty out the dry system.	"A" operator will perform this task.	
4.	Put the cooler feed belt in reverse to bypass the cooler while dumping the dry system.	"B" and "C" operator will perform this task.	
5.	When the dry system runs empty, verify that the interlocks are enabled.	"A" operator will perform this task.	
6.	Shut down the dry system by clicking on the dry system shut down which will systematically shut down the: ⇒ #70 screw. ⇒ Transfer conveyor. ⇒ Dryer elevator. ⇒ Dryer discharge conveyor. ⇒ Dryer. ⇒ Recycle elevator. ⇒ #2 drag flight. ⇒ Clean-up elevator ⇒ Fines conveyor. ⇒ #1 drag.	"A" operator will perform this task.	

NOTE

THE GRANULATOR IS NOT INTERLOCKED TO ANY OTHER PEACE OF EQUIPMENT AND MUST BE SHUT DOWN AT THE LOCAL STATION

7.	Shut the granulator down.	"B" and "C" operator will perform this task.	

8.	Shut down the product weigh conveyor.	"A" operator will perform this task.	
Steps		**Key Points**	**PPE/Hazards**
9.	Shut down the cooler feed belt.	"A" operator will perform this task.	
10.	After the bulk flow cooler is empty shut down the ribbon blender.	"A" operator will perform this task.	

NOTE

THE BAG HOUSE SCREW MUST BE LEFT RUNNING UNTIL THE BAG HOUSE IS EMPTY

11.	Shut down bag house screw.	"A" operator will perform this task.	
12.	After the bag house goes empty, close the air valve to the pulse timer, turn the pulse timer switch to the off position and close the air valve to the trick gate vibrater.	"B" operator will perform this task.	
13.	Shut down vibrating screens.	"A" operator will perform this task.	
14.	Shut down cage mills.	"A" operator will perform this task.	
15.	Shut down the vent bag house fan.	"A" operator will perform this task.	
16.	Shut down the dryer cyclone screws.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

NORMAL SHUT DOWN FOR MAP AND 16-20-0

Granulation "A" Operator-01
8/18/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Normal Shut Down For MAP And 16-20-0

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Not tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as**		

required.		

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber pump tank is at the desired level indicated by level indicator.	"A" operator will perform this task.	
2.	Verify that the R/G scrubber pump tank is at the desired level indicated by level indicator.	"A" operator will perform this task.	
3.	Verify that the preneut-tank is at desired level indicated by level indicator.	"A" operator will perform this task.	
4.	If there is vapor ammonia going to the scrubbers, close the discharge valve on the discharge side of the auto controller.	"B" operator will perform this task.	
5.	Close the vapor ammonia valve (2" ball valve) going to the dryer scrubber.	"B" operator will perform this task.	
6.	Close the vapor ammonia valve (2" ball valve) going to the granulator scrubber.	"B" operator will perform this task.	
7.	Call PPA and have shut the Fertilizer Feed Stock off.	"A" operator will perform this task.	
8.	Call the phos acid plant and have them shut down the 42% feed pump or shut it down and call them and tell them that it has been shut down.	"A" operator will perform this task.	

NOTE

IF RUNNING 16-20-0, SHUT THE SULFURIC ACID AND WATER OFF GOING TO THE PRENEUTRALIZER

9.	Close the sulfuric acid valve (2" gate valve) on the incoming line.	"B" operator will perform this task.	
10.	Close scrubber liquor to the preneut-tank valve. (4" plug valve) and open the valve (4" plug valve) on the circulation line.	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
11.	Take the Pipe Cross Reactor out of service by clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.	"A" operator will perform this task.	
12.	Monitor the granulator until the discharge product is dry and then shut the 250# steam valve.	"B" operator will perform this task.	
13.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.	"B" operator will perform this task.	
14.	Shut down the dry system by clicking on the dry system shut down which will systematically shut down the ⇒ #70 screw. ⇒ Transfer conveyor. ⇒ Dryer elevator. ⇒ Dryer discharge conveyor. ⇒ Dryer. ⇒ Recycle elevator. ⇒ #2 drag flight. ⇒ Clean-up elevator ⇒ Fines conveyor. ⇒ #1 drag.	"A" operator will perform this task.	

NOTE

THE GRANULATOR IS NOT INTERLOCKED TO ANY OTHER PEACE OF EQUIPMENT AND MUST BE SHUT DOWN AT THE LOCAL STATION

15.	Shut the granulator down	"B" operator will perform this task.	
16.	Shut down the product weigh conveyor	"A" operator will perform this task.	
17.	Shut down the cooler feed belt.	"A" operator will perform this task.	

18.	After the bulk flow cooler is empty shut down the ribbon blender.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
19.	Shut down bag house screw.	"A" operator will perform this task.	
20.	Shut down vibrating screens.	"A" operator will perform this task.	
21.	Shut down cage mills.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN OF THE SCRUBBER SYSTEM

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Long Term Shut Down Of The Scrubber System.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as required.**		• **The scrubber system must stay in service until the dry system and the ammonia system has been shut down**

TASKS:

1. Opening and closing valves.
2. Removing and installing blanks.

Steps		Key Points	PPE/Hazards
1.	Open the fresh water valve (2" gate valve) to the dryer scrubber pump tank and start filling it.	B" operator will perform this task.	
2.	Open the preneutralizer transfer pump valve (4" plug valve) to the preneutralizer tank and start filling it with wash water.	"B" operator will perform this task.	
3.	Close the preneutralizer transfer pump valve (4" plug valve) on the circulation line back to the dryer scrubber pump tank.	"B" operator will perform this task.	
4.	Open the water to the preneutralizer tank auto valve to help fill it with wash water.	"A" operator will perform this task.	
5.	When the preneutralizer tank reaches the desired level, close the preneutralizer transfer pump line valve (4" diaphragm valve) to the preneutralizer tank.	"B" operator will perform this task.	
6.	Open the preneutralizer transfer pump circulation line valve (4" plug valve) back to the dryer scrubber pump tank.	"B" operator will perform this task.	
7.	When the preneutralizer tank reaches the desired level, close the preneutralizer transfer pump line valve (4" diaphragm valve) to the preneutralizer tank.	"B" operator will perform this task.	
8.	Close the water to the preneutralizer tank auto valve.	"A" operator will perform this task.	
9.	Open the preneutralizer transfer pump circulation line valve (4" plug valve) back to the dryer scrubber pump tank.	"B" operator will perform this task.	
10.	Close the water valve (2" gate valve) to the dryer scrubber pump tank.	"B" or "C" operator will perform this task.	
11.	Open the drain valve to the wastewater tank.	"B" or "C" operator will perform this task.	
12.	Close the preneutralizer transfer pump circulation valve (4" diaphragm valve) to the dryer scrubber pump tank and start draining the scrubber pump tanks.	"B" or "C" operator will perform this task.	

Steps		Key Points	PPE/Hazards
13.	When the dryer scrubber pump tank level reaches the suction line of the circulation pump, shut the dryer circulation pump down.	"A" operator will perform this task.	
14.	When the dryer scrubber pump tank goes empty, shut the dryer scrubber transfer pump down. Whichever one is in service.	"A" operator will perform this task.	
15.	Open the dryer scrubber pump tank valve (8" knife valve) to the suction side of transfer pumps, whichever one is out of service and drain the remaining water out of pump tank.	"C" operator will perform this task.	
16.	When the granulator scrubber pump tank level reaches the scrubber pump suction line, shut down the granulator scrubber circulation pump.	"A" operator will perform this task.	
17.	When the granulator scrubber pump tank goes empty, shut down the preneutralizer transfer pump.	"A" operator will perform this task.	
18.	Open the granulator scrubber pump tank valve (8" knife valve) to suction side of the preneutralizer tank transfer pump, whichever one is not in service and drain the remaining water out of the pump tank.	"C" operator will perform this task.	
19.	Close the 125# steam valve (2" gate valve) going to the preneutralizer tank ammonia sparges.	"B" operator will perform this task.	
20.	Open the drain valve (3" plug valve) on the bottom of the preneutralizer tank and start draining the preneutralizer tank.	"C" operator will perform this task.	
21.	When the preneutralizer tank goes empty, shut the preneutralizer slurry circulation pump down. Which ever pump is in service.	"A" operator will perform this task.	
22.	Open the drain valve (3" plug valve) on the suction side of the preneutralizer circulation pumps.	"C" operator will perform this task.	
23.	Shut down the Pipe Cross Reactor feed pump which ever one is in service.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
24.	Open the drain valve (2" plug valve) on the suction side of the Pipe Cross Reactor feed pumps.	"C" operator will perform this task.	
25.	Close the water valve (¾" gate valve) to the dryer fan.	"B" operator will perform this task.	
26.	Shut the dryer fan down.	"A" operator will perform this task.	
27.	Shut down the granulator fan.	"A" operator will perform this task.	
28.	Shut down the granulator fan bearing oiling system.	"C" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

EMERGENCY SHUT DOWN OF LOADING AND UNLOADING AMMONIA RAILCARS AND TRUCKS

Granulation "C" Operator-01
3/21/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform an emergency shut down of the ammonia loading and unload system for railcars and trucks.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Work gloves • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required	• Possible ammonia exposure	• Possible ammonia release

• Safety glasses		

TASKS:

1. Closing valves.

Steps	Key Points	PPE/Hazards

NOTE
THIS PROCEDURE WILL COVER A RUPTURED HOSE OR LEAK, POWER OUTAGE AND LOSS OF INSTRUMENT AIR

1.	In the event of a ruptured hose, and the operator can not get to the ammonia valves to close them, evacuate the area and call the emergency #333 and have the emergency response team.	Shut the ammonia unloading compressor or the ammonia pump, which ever is be used down.	Possible ammonia release.
2.	If there is a power failure, close the ammonia vapor ammonia liquid valves on the railcar or truck, on the ammonia unloading loading station and by the ammonia-unloading compressor.		
3.	If there is a loss of instrument air, close the ammonia vapor and ammonia liquid valves on the railcar or truck, on the ammonia unloading loading station and by the ammonia-unloading compressor.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

EMERGENCY SHUT DOWN FOR MAP AND 16-20-0

Granulation "A"Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform an Emergency Shut Down.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as		

required.		

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

	Steps	Key Points	PPE/Hazards
1.	**Identify the emergency.**	All Operators	
2.	**If an operator error occurs** (we all make mistakes) and the error can't be corrected on the go use the normal shutdown procedures.	All operators	
3.	After the problem has been corrected, start up using the normal start-up procedure.	All operators	
4.	**If a piece of equipment fails** it will either trip or be identified by high amps or low amps. If it trips out it will shut the rest of the interlocked equipment down, then the flows will need to be taken out of the granulator by: clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.	"A" operator will perform this task.	
5.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.	"A" operator will perform this task.	
6.	Complete the shut down using the Normal shut down procedure.	All operators	
7.	After the problem has been corrected follow the normal star-up procedures.	All operators	

Steps	Key Points	PPE/Hazards

NOTE

IF A LEAK OR SPILL OF PHOSPHORIC ACID, SULFURIC ACID, AND FERTILIZER FEED STOCK (FFS) OR A RELEASE OF AMMONIA IS LARGE ENOUGH, THE EMERGENCY SYSTEM MUST BE ACTIVATED AND THE ENVIRONMENTAL DEPARTMENT MUST BE NOTIFIED.

8.	**If an ammonia line fails:** Turn the emergency shut off switch to the off position.	All operators can perform this task.	
9.	Shut the ammonia pump down.	"A" operator will perform this task.	
10.	Use the Normal Shutdown procedure to complete the shut down.		
11.	Isolate the failed line.	All operators can perform this task.	
12.	Steam purge the failed ammonia line.	All operators can perform this task.	
13.	Close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.	"B" operator will perform this task.	
14.	After the line has been repaired and tested: turn the safety switch to the open position.	"A" operator for the switch in the control room, "C" operator for the switch out by the truck station.	

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

15.	Start the ammonia pump.	"A" operator will perform this task. Refer to the procedure Starting ammonia pumps.	
16.	Start up using the Normal star-up procedures.	ALL operators	

Steps		Key Points	PPE/Hazards
17.	**If there is a Failed phos acid line,** shut the 42% acid pump down and call phos acid and tell them that the pump is down.	"A" operator will perform this task.	
18.	Follow the Normal shutdown procedure.	All operators	
19.	Isolate the bad section of the line if possible.	All operators	
20.	After the line has been repaired follow the Normal start-up procedure.	All operators	
21.	**If there is a Failed sulfuric acid line,** Call the phos plant and have them close the sulfuric acid valve to the granulation plant.	"A" operator will perform this task.	
22.	If using the sulfuric acid for 16-20-0, use the normal shut down procedure to shut the plant down.	All operators	
23.	After the repairs have been made use the Normal star-up procedure for start-up.	All operators	
24.	**If there is a Failed fertilizer feed stock line,** call the PPA plant and ask them to shut the fertilizer feed stock off going to the granulation plant.	"A" operator will perform this task.	
25.	Follow the Normal shutdown procedure.	All operators	
26.	After the line has been repaired follow the Normal start-up procedure.	All operators	
27.	**If a full Power Failure** occurs all electrical equipment will go down. All slurry lines will need to be steamed out.	"C" operator will perform this task.	
28.	Close the vapor ammonia auto controller to the Pipe Cross Reactor.	"A" operator will perform this task.	
29.	Open the Pipe Cross Reactor drain block valve (3" plug valve) to the	"A" operator will perform this task.	

	wastewater tank.		
Steps		**Key Points**	**PPE/Hazards**
30.	Open the 250# steam valve (4" plug valve) to the Pipe Cross Reactor.	"A" operator will perform this task.	
31.	Close the vapor ammonia valve (8" globe valve) to the preneut-tank.	"B" operator will perform this task.	
32.	Close the scrubber liquor to the preneut-tank (4" plug valve).	"B" operator will perform this task.	
33.	Close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.	"B" operator will perform this task.	
34.	Close the suction side valve (6" plug valve) to the slurry circulation pump that is in service.	"C" operator will perform this task.	
35.	Open the drain valve (2" plug valve) on the slurry circulation pump suction line to the pump that is in service.	"C" operator will perform this task.	
36.	Close the valve (6" plug valve) on the suction side of the Pipe Cross Reactor feed pump that is in service.	"C" operator will perform this task.	
37.	Open the drain valve (2" plug valve) on the suction line to the Pipe Cross Reactor feed pump that is in service.	"C" operator will perform this task.	
38.	When the power comes on follow the Normal start-up procedures.	All operators	
39.	**If a pump fails** and the plant can't continue to run with out it. Follow the Normal shutdown procedure.	All operators	
40.	Isolate the pump.	All operators	
41.	After the repairs have been made, follow the Normal start-up procedures.	All operators	
42.	**If a motor fails** on a piece of equipment and the plant can't run with out it, follow the Normal shut down procedure.	All operators	

43.	After the repairs have been made, follow the Normal start-up procedures.	All operators	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

NORMAL SHUT DOWN FOR MAP with BACK TITRATION

Granulation "A" Operator-01
8/10/04
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Normal Shut Down For MAP

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Not tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.**		

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber pump tank is at the desired level indicated by level indicator.	"A" operator will perform this task.	
2.	Verify that the R/G scrubber pump tank is at the desired level indicated by level indicator.	"A" operator will perform this task.	
3.	Verify that the preneut-tank is at desired level indicated by level indicator.	"A" operator will perform this task.	
4.	Call the phos acid plant and have them shut down the 42% feed pump or shut it down and call them and tell them that it has been shut down.	"A" operator will perform this task.	
5.	Close the ammonia valves going to the Prenuet tank.		
6.	Close scrubber liquor to the preneut-tank valve. (4" plug valve) and open the valve (4" plug valve) on the circulation line.	"B" operator will perform this task.	
7.	Take the Pipe Cross Reactor out of service by clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.	"A" operator will perform this task.	
8.	Monitor the granulator until the discharge product is dry.	"A" operator will perform this task.	
9.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.	"A" operator will perform this task.	
10.	Steam out acid spray header with steam.	"B" operator will perform this task.	
11.	Close valves going to fire box to eliminate fire.	"B" operator will perform this task.	

	Steps	Key Points	PPE/Hazards
12.	Shut down the dry system by clicking on the dry system shut down which will systematically shut down the ⇒ #70 screw. ⇒ Transfer conveyor. ⇒ Dryer elevator. ⇒ Dryer discharge conveyor. ⇒ Dryer. ⇒ Recycle elevator. ⇒ #2 drag flight. ⇒ Clean-up elevator ⇒ Fines conveyor. ⇒ #1 drag.	"A" operator will perform this task.	

NOTE

THE GRANULATOR IS NOT INTERLOCKED TO ANY OTHER PEACE OF EQUIPMENT AND MUST BE SHUT DOWN AT THE LOCAL STATION

13.	Shut the granulator down	"B" operator will perform this task.	
14.	Shut down the product weigh conveyor	"A" operator will perform this task.	
15.	Shut down the cooler feed belt.	"A" operator will perform this task.	
16.	After the bulk flow cooler is empty shut down the ribbon blender.	"A" operator will perform this task.	
17.	Shut down bag house fan and screw.	"A" operator will perform this task.	
18.	Shut down vibrating screens.	"A" operator will perform this task.	
19.	Shut down cage mills.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LONG TERM SHUT DOWN FOR MAP with BACK TITRATION

Granulation "A" Operator-01
8/10/04
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform Long Term Shut Down For MAP with BACK TITRATION.

Requirements Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required**	• **Exposure to ammonia** • **Contact with sulfuric acid**	• **Ammonia Release**

TASKS:

1. Opening and closing valves.
2. Shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber pump tank is at the desired level.	"A" operator will perform this task.	
2.	Verify that the granulator scrubber pump tank is at the desired level.	"A" operator will perform this task.	
3.	Verify that the preneutralizer tank is at the desired level indicated.	"A" operator will perform this task.	
4.	Call the phos acid plant and have them shut down the 42% feed pump or shut it down and call them and tell them that it has been shut down	"A" operator will perform this task.	
5.	Close the sulfuric acid valve (2" gate valve) on the incoming line.	"B" operator will perform this task	
6.	Close the vapor ammonia to the preneutralizer tank valve. (8" globe valve)	"B" operator will perform this task.	
7.	Close the scrubber liquor to the preneutralizer tank valve. (4" plug valve) and open the valve (4" plug valve) on the circulation line.	"B" operator will perform this task	
8.	When the preneutralizer tank goes empty, take the Pipe Cross Reactor out of service by clicking on the slurry circulation button. This will automatically open the valve on the circulation line and close the valve on the feed line.	"A" operator will perform this task.	

NOTE

AT THIS POINT THE PRENEUTRALIZER TANK AND THE SCRUBBERS CAN BE PUT ON WASH. REFER TO THE PROCEDURE LONG TERM SHUT DOWN OF THE SCRUBBER SYSTEM

9.	Put the vapor ammonia to the Pipe Cross Reactor controller in manual and set it at 0%.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
10.	Open the 250# steam auto valve and blow the slurry out of the Pipe Cross Reactor.	"A" operator will perform this task.	
11.	Monitor the granulator until the discharge product is dry.	"A" operator will perform this task.	
12.	Steam out acid header with steam.	"A" operator will perform this task.	
13.	Monitor the granulator until the discharge product is dry.	"A" operator will perform this task.	
14.	Shut the ammonia pump off and close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Start-Ups

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

STARTING THE AMMONIA PUMPS

Granulation "A"Operator-01
8/18/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Start The Ammonia Pumps.

Requirements: Department of Transportation certificate and Process Safety certificate.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as required.**		

TASKS:

1. Staring pump.
2. Setting set points on the

Steps	Key Points	PPE/Hazards

NOTE

THE PUMPS ARE DESIGNED TO PUT OUT 100# MORE PRESSURE THAN THE INLET PRESSURE AND ARE PROTECTED BY AN INTERNAL RELIEF VALVE TO ALLOW AMMONIA TO RECIRCULATE WITHIN THE AMMONIA PUMPS, IF THE AMMONIA PRESSURE EXCEEDS 100#. THE MANUAL SETTING OF THIS VALVE IS THREE (2-3) TURNS CLOCK WISE OPEN.

1.	Set the PCV valve (pressure control valve) at 0%	"A" operator will perform this task.	
2.	Start the ammonia pump.	"A" operator will perform this task.	
3.	Let the ammonia pump run for several minutes.		
4.	Slowly start closing the PCV (pressure control valve) to increase the line pressure until it has reached the desired pressure. (120#-135#)	"A" operator will perform this task. The ammonia pump pressure must never exceed 80# differential pressure between the ammonia sphere pressure and the line pressure	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

STARTING THE BULK FLOW COOLER BLOWER

Granulation "B" Operator-01
3/31/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Start The Bulk Flow Cooler Blower.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves**		

• **Hearing protection as required.**		

TASKS:

1. Opening and closing valves.
2. Starting motor.

Steps		Key Points	PPE/Hazards
1.	Verify that the drip oilers are full of oil.		
2.	Open the blower out let valve and the valves to the bulk flow header.		
3.	Close the small drain valve on the bottom of the discharge header.		
4.	Close the blower inlet valve.		

CAUTION

AFTER STARTING THE BLOWER MOTOR CHECK FOR ABNORMAL NOISE AND VIBRATION-DO NOT OPERATE THE BLOWER IF ABNORMAL NOISE AND VIBRATION ARE PRESENT

5.	Start the blower motor and allow the blower to reach full speed.		
6.	If vibration and noise normal, open the blower inlet valve until the discharge pressure reached 3.5 psi.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

NORMAL START-UP FOR MAP AND 16-20-0

Granulation "A" Operator-01
8/18/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Normal Start-Up Of MAP And 16-20-0.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as required.**		• **The scrubber system must be in service to collect all dust and ammonia.** • **All vent and bleed valve must be closed.**

TASKS:

1. Opening and closing valve.
2. Starting and shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the scrubber system is in normal operation.	"A" operator will perform this task.	
2.	Verify that the ammonia system is ready for service.	"A" operator will perform this task.	
3.	Verify that the dry system is in operation.	"A" operator will perform this task.	
4.	Verify that the Fertilizer Feed Stock system is ready for service.	"B" operator will perform this task.	
5.	Open the manual start-up steam controller to the desired set point and start heating condensate in the condensate collection tank.	"A" operator will perform this task.	
6.	Verify that the preneut-tank (3" plug valve) drain valve is closed.	"C" operator will perform this task.	
7.	Verify that the slurry circulation pump is ready for service.	"C" operator will perform this task. Refer to the procedures Preparing slurry feed pumps for start-up. (North or South)	
8.	Verify that the Pipe Cross Reactor slurry feed pump is ready for service.	"C" operator will perform this task. Refer to the procedures Preparing the Pipe Cross Reactor Feed Pumps for Service	
9.	Verify that the drain valve (3" plug valve) is closed on Pipe Cross Reactor.	"B" operator will perform this task.	
10.	Start a fire in the dryer furnace.	"B" operator will perform this task. Refer to the procedure Lighting the Dryer Furnace Burners.	

Steps		Key Points	PPE/Hazards
11.	Increase the set point on fuel gas to the dry furnace temperature controller for the desired temperature.	"A" operator will perform this task.	

NOTE

IF STARTING UP ON 16-20-0 IT WILL NOT BE NECESSARY TO CALL PHOS ACID TO START THE 42% ACID PUMP UNLESS USING TANK #26 AND WATER FOR FEED ACID

12.	Call the phos acid plant and have them start a 42% acid pump.	"A" operator will perform this task.	
13.	When the indicator shows a flow of acid to the preneutralizer tank, put the auto flow controller in the auto position and enter the set point for the desired flow rate.	"A" operator will perform this task.	
14.	Set the slurry circulation VFD (variable frequency drive) at 85%.	"A" operator will perform this task.	

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES.

15.	Monitor the level in the preneutralizer tank by the level indication, when the tank reaches the desired level start the slurry circulation and the Pipe Cross Reactor feed pumps that are ready for service.	"A" operator will perform this task.	
16.	When the level in the preneut-tank reaches the desired level by the level indicator open the liquid ammonia valve (3" globe valve) to the ammonia vaporizer	"B" operator will perform this task.	
17.	Open the vapor ammonia valve (8" globe valve) to the preneut-tank.	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
18.	Put the vapor ammonia to the preneut-tank auto flow controller in auto and enter the desired set point.	"A" operator will perform this task.	
20.	When the ammonia vaporizer pressure and the temperature reaches the desired levels, close the start-up steam manual valve.	"A" operator will perform this task.	
21.	As the gravity comes up on the preneutralizer tank slurry, start the scrubber liquor from the granulator scrubber pump tank by opening the valve (4" gate valve) on the scrubber acid to the preneutralizer tank line and closing the 4" plug valve on the circulation line.	"B" operator will perform these tasks.	
22.	Put the scrubber acid to the preneutralizer tank auto controller in auto and enter the set point for the desired flow rate. Also start the water to the preneutralizer tank if running 16-20-0	"A" operator will perform this task.	
23.	Open the water to the preneutralizer tank by opening the valve (2" ball valve) by the water filter tank; open the valve (2" diaphragm valve) above the preneutralizer tank. And closing the valve (2" diaphragm valve) going to the scrubber acid circulation line.	"B" operator will perform these tasks.	
26.	Open the automatic 250# steam valve to the Pipe Cross Reactor.	"A" operator will perform this task.	
27.	Monitor the slurry MR. in the preneutralizer tank by running titration.	"B" operator will perform this task.	
28.	When the MR. Reaches .45 to .50, (.60 for 16-20-0) reset the ammonia to the preneutralizer tank and the 42% acid or Fertilizer Feed Stock (if running 16-20-0) to the preneutralizer tank to maintain the MR.	"A" operator will perform this task.	

Steps	Key Points	PPE/Hazards

NOTE

AT THIS POINT IF STARTING-UP ON 16-20-0, START THE SULFURIC ACID TO THE PRENEUTRALIZER TANK

29.	Open the sulfuric acid valve (2" gate valve) on the incoming acid and the (2" gate valve) to the preneutralizer tank.	"B" operator will perform this task. (For 16-20-0)	
30.	Put the sulfuric acid to the preneutralizer controller in manual, after the flow has been established put the controller in auto and set for the desired flow.	"A" operator will perform this task. (For 16-20-0)	
31.	Close the 250# steam auto controller to the Pipe Cross Reactor.	"A" operator will perform this task.	
32.	When the preneutralizer tank is charged and ready to go, set the ammonia to the PCR in the cascade mode and set the ratio for the desired ratio.	"A" operator will perform this task.	
33.	Put the slurry to Pipe Cross Reactor in the manual mode.	"A" operator will perform this task.	
34.	Click on the slurry to the granulator button, as the slurry flow indicator starts to indicate a flow, put the slurry controller in the auto position and set it for the desired flow rate.	"A" operator will perform this task.	
35.	Start the cooler discharge belt.	"A" operator will perform this task.	
36.	Start the ribbon blender.	"A" operator will perform this task.	
37.	Start the product weigh belt and put the auto weigh controller in auto and enter the desired set point.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
38.	Put the cooling water auto controller in the auto position and enter the set point for the desired temperature.	"A" operator will perform this task.	
39.	When the ribbon blender has a sufficient load in it, start the dust suppressant.	"A" operator will perform this task.	
40.	As the ph. Comes up in the dryer scrubber and the granulator scrubber pump tank increase the amount of Fertilizer feed stock gong to the dryer scrubber pump tank.	"A" operator will perform this task.	

NOTE

IF RUNNING 16-20-0, START ADDING SAND FOR GRADE CONTROL AT ABOUT 100# PER TON UNTIL THE FIRST GRADE COMES BACK THEN ADJUST THE AMOUNT OF SAND ACCORDING TO THE GRADE

41.	At this point plant is in normal operation.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND OF THE AMMONIA FROM THE AMMONIA SPHERE TO THE AMMONIA VAPORIZER

Granulation "A" Operator-02
8/18/05
Reviewed Date: 8/18/05
Reviewed By: Mike8/18/05 Skinner and Willie Martinez

Objective: Provide operating personnel with step-by-step instruction on how to perform a Start-Up After Turn Around Of The Ammonia Sphere To The Ammonia Vaporizer.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Wrench for plugs and possible a valve wrench.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required.	• Exposure to ammonia	• Ammonia release

TASKS:

1. Opening and closing valves
2. Hooking up and unhooking hoses.

Steps		Key Points	PPE/Hazards
1.	Close the bleed valve (¾" globe valve) on the discharge side of the auto ammonia controller to the granulator.	"B" operator will perform this task.	
2.	Close the vapor ammonia to the granulator valve (6" globe valve) on discharge side of auto controller.	"B" operator will perform this task.	
3.	Close the bleed valve (¾" globe valve) on inlet side of the auto ammonia controller to the granulator.	"B" operator will perform this task.	
4.	Close the vapor ammonia to the granulator valve (6" globe valve) on the inlet side of the auto ammonia controller.	"B" operator will perform this task.	
5.	Close the bleed valve (1/2" globe valve) on the inlet side of the auto ammonia controller to the Pipe Cross Reactor.	"B" operator will perform this task.	
6.	Open the vapor ammonia valve (6" globe valve) on inlet side of auto ammonia controller to the Pipe Cross Reactor	"B" operator will perform this task.	
7.	Close the vapor ammonia valve (6" globe valve) on the discharge side of the auto ammonia controller to the Pipe Cross Reactor.	"B" operator will perform this task.	
8.	Close the vapor ammonia bleed valve (¾" globe valve) on the down leg by the slurry sample valve.	"B" operator will perform this task.	
9.	Close the bleed valve (¾"globe valve) by the auto ammonia controller to the preneutralizer tank.	"B" operator will perform this task.	
10.	Close the vapor ammonia valve (8" globe valve) to the preneutralizer tank on the discharge side of the auto ammonia controller.	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
11.	Open the vapor ammonia valve (8" globe valve) on the inlet side of ammonia to the preneutralizer tank auto controller.	"B" operator will perform this task.	
12.	Close the bleed valves (1/2" globe valves) on the suction side of the ammonia feed pumps.	"C" operator will perform this task.	
13.	Close the bleed valves (1/2" globe valve) on the discharge side of ammonia feed pumps.	"C" operator will perform this task.	
14.	Close the vent valve (6" globe valve) on top of the ammonia sphere.	"C" operator will perform this task.	
15.	Open the block valve (4" globe valve) on the sphere level indicator.	"C" operator will perform this task.	
16.	Open the block valve (4" globe valve) on the North pressure relief valve on top of the ammonia sphere.	"C" operator will perform this task.	This valve must be lock open.
17.	Open the valve (4" globe valve) on the South pressure relief valve on top of the ammonia sphere.	"C" operator will perform this task.	This valve must be lock open.
18.	Verify that the vapor excess flow block valve is open and ready for service.	"C" operator will perform this task.	

NOTE

THERE ARE TWO MANUAL SAFETY ELECTRIC/AIR SWITCHES ON AMMONIA LINE TO AMMONIA PUMPS, #1 SWITCH IS IN THE SOUTHEAST CORNER OF THE AMMONIA TRUCK LOADING/UNLOADING CONTROL PANEL AND THE #2 SWITCH IS ON THE OLD CONTROL BOARD

19.	Verify that the safety electric/air switches are open and are ready for service.	The C operator will do the #1 switch and the A will do the #2 switch	
20.	Open the ammonia pump suction valves (3" globe valves) on both the north and south ammonia pumps.	"C" operator will perform this task.	
21.	Open the ammonia pump discharge valves. (3" globe valves)	"C" operator will perform this task.	
22.	Verify the double block and bleed is closed.		

23.	Open the ammonia pump feed valve (6" globe valve). (the center valve under the sphere).	"C" operator will perform this task.	
24.	Open the ammonia circulation valve (4" globe valve) back to the ammonia sphere. (Northwest valve under sphere).	"C" operator will perform this task.	
25.	Open the inlet valve (3" globe valve) to the ammonia pump circulation auto controller.	"C" operator will perform this task.	
26.	Open the discharge valve (3" globe valve) from the ammonia pump circulation auto controller.	"C" operator will perform this task.	
27.	Open the ammonia sprargers valves (4" globe valves) (2ea.) to the preneutralizer tank.	"B" operator will perform this task.	
28.	Open the ammonia unloading valves under the ammonia sphere. (South east and south west valves)	"C" operator will perform this task.	
29.	Verify that the 6" globe valve under the ammonia-unloading shack that sits on a 45° angle is closed.	"C" operator will perform this task.	
30.	Open the 3" globe valve that is under the ammonia-unloading shake on the 90° turn.	"C" operator will perform this task.	
31.	Close the 3" globe valve that is just south of the 6" valve under the ammonia-unloading shack.	"C" operator will perform this task.	
32.	Open the top valve that sits south of the ammonia compressor separator pot next to the floor.	"C" operator will perform this task.	
33.	Close the bottom valve that sits south of the ammonia compressor next to the floor.	"C" operator will perform this task.	
34.	Open the vapor ammonia valve to the dryer scrubber and to the granulator scrubber.	"B" operator will perform this task.	
35.	Hook the truck vapor hose to the scrubbers vapor line.	"C" operator will perform this task.	
36.	Open the ammonia vapor valve in the southeast corner of the granulation building by the ammonia vapor to the scrubber's auto valve.	"A" operator will perform this task. This valve will have to be unlocked.	

37.	Open the vapor ammonia valve to the scrubbers on the discharge side of the auto valve.	"A" operator will perform this task.	
38.	Open the truck vapor valve from the ammonia sphere to scrubbers slowly. (Open valve 1½ turns to prevent slamming).	"C" operator will perform this task. 0_2 will be purged from the sphere to the scrubbers	
39.	Start unloading an ammonia railcar to the ammonia sphere; **Do not start the ammonia-unloading compressor**.	"C" operator will perform this task. Refer to the procedure unloading an ammonia railcar.	
40.	Purge the sphere for 1½ hours then shut the valve to scrubbers if pressure on sphere raises, it indicates that there is oxygen still present in the sphere the valve to the scrubbers must be open again.	"C" operator will perform this task.	
41.	After all of the 0_2 has been purged from the ammonia sphere the unloading compressor can be started.	"C" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND FOR MAP AND 16-20-0

Granulation "A"Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Start-Up After Turn Around For MAP and 16-20-0.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Possible valve wrench.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as**		

required.		

TASKS:

1. Opening and closing valves.
2. Starting pumps and equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the scrubber system is in operation.	"A" operator will perform this task. Refer to Start-up after turn around procedures on wastewater system, dryer scrubber and granulator scrubbers	
2.	Verify that the ammonia system is in operation.	"A" operator will perform this task. Refer to start-up after turn around procedures on ammonia sphere and vaporizer.	
3.	Verify that the dry system is in operation	"A" operator will perform this task. Refer to the procedure start-up after turn around of the dry system	
4.	Verify that the Fertilizer Feed Stock valves are set for the scrubbers.	"B" operator will perform this task.	
5.	Increase the set point on the fuel gas to the dryer furnace for the desired temperature.	"A" operator will perform this task.	
6.	Start the fines bin conveyor.	"A" operator will perform this task.	
7.	Verify that the preneutralizer tank drain valve is closed. (3" plug valve)	"C" operator will perform this task.	
8.	Verify that the slurry circulation pump is ready for service.	"C" operator will perform this task. Refer to the procedure Preparing the Slurry Circulation Pumps for Start-up.	
9.	Verify that the Pipe Cross Reactor slurry feed pump is ready for service.	"C" operator will perform this task. Refer to the procedure Preparing the Pipe Cross Reactor Feed	

		pump for Start-Up	
Steps		**Key Points**	**PPE/Hazards**
10.	Verify that the Pipe Cross Reactor drain valve (3" plug valve) is closed.	"B" operator will perform this task.	
11.	Verify that the preneutralizer tank level indicator is ready for service.	"B" operator will perform this task.	
12.	Set the vapor ammonia control valve to the preneutralizer tank in the manual position and enter the desired set point.	"A" operator will perform this task.	

NOTE

IF STARTING UP ON 16-20-0 IT WILL NOT BE NECESSARY TO CALL PHOS ACID TO START THE 42% ACID PUMP UNLESS USING TANK #26 AND WATER FOR FEED ACID

13.	Call the Phos acid plant and have them start the 42% acid pump to granulation.	"A" operator will perform this task.	
14.	Set the slurry circulation auto controller at the desired set point.	"A" operator will perform this task.	

NOTE

AFTER STARTING THE PUMP CHECK FOR ANY VIBRATION AND ABNORMAL NOISES.

15.	Monitor the level in the preneutralizer tank by the level indicator, when the tank reaches desired level, start the slurry circulation pump and Pipe Cross Reactor feed pump that is ready for service.	"A" operator will perform this task.	
16.	When the level in the preneutralizer tank reaches the desired level, open the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.	"B" operator will perform this task.	
17.	Open the vapor ammonia block valve (8" globe valve) to the preneutralizer	"B" operator will perform this task.	

	tank.		

Steps		Key Points	PPE/Hazards
18.	After the vapor ammonia flow to the preneutralizer tank has been established, put auto controller in auto and enter the desired set point.	"A" operator will perform this task.	
19.	When the ammonia vaporizer pressure and temperature reach the desired level, close the start-up steam controller.	"A" operator will perform this task.	
20.	As the gravity comes up on the preneutralizer tank slurry, start the scrubber liquor from the granulator scrubber pump tank by opening the valve (4" plug valve) on the scrubber acid to the preneutralizer tank line and close the circulation valve (4" plug valve).	"B" operator will perform these tasks.	
21.	Put the auto controller in auto and enter the set point for the desired flow rate. If running 16-20-0 start the water to the preneutralizer tank.	"A" operator will perform this task.	
22.	Open the automatic 250# steam valve to the Pipe Cross Reactor.	"A" operator will perform this task.	
23.	Monitor the slurry MR. In the preneutralizer tank by running titration.	"B" operator will perform this task. Refer to the procedure Running Titrations	

Steps	Key Points	PPE/Hazards

NOTE

AT THIS POINT IF STARTING-UP ON 16-20-0, START THE SULFURIC ACID TO THE PRENEUTRALIZER TANK

24.	Open the sulfuric acid valve (2" gate valve) on the incoming acid and the (2" gate valve) to the preneutralizer tank.	"B" operator will perform this task. (For 16-20-0)	
25.	Put the sulfuric acid to the preneutralizer controller in manual, after the flow has been established put the controller in auto and set for the desired flow.	"A" operator will perform this task. (For 16-20-0)	
26.	When the MR. reaches .45 to .50, reset the ammonia to the preneutralizer tank and the 42% acid of Fertilizer Feed Stock to the preneutralizer tank to maintain the MR.	"A" operator will perform this task.	
27.	Close the 250# steam auto valve to the Pipe Cross Reactor.	"A" operator will perform this task.	
28.	Set the ammonia to the PCR in the cascade mode and set the ratio for the desired ratio.	"A" operator will perform this task.	
29.	Put the slurry to Pipe Cross Reactor in the manual mode.	"A" operator will perform this task.	
30.	Click on the slurry to the granulator button, as the slurry flow indicator starts to indicate a flow, put the slurry controller in the auto position and set it for the desired flow rate.	"A" operator will perform this task.	
31.	Start the cooler discharge belt.	"A" operator will perform this task.	
32.	Start the ribbon blender.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
33.	Start the product weigh belt and put the auto weigh controller in auto and enter the desired set point.	"A" operator will perform this task.	
34.	Put the cooling water auto controller in the auto position and enter the set point for the desired temperature.	"A" operator will perform this task.	
35.	When the ribbon blender has a sufficient load in it, start the dust suppressant.	"A" operator will perform this task.	
36.	As the ph. Comes up in the dryer scrubber and the granulator scrubber pump tank, increase the amount of fertilizer feed stock going to the dryer scrubber pump tank.	"A" operator will perform this task.	

NOTE

IF RUNNING 16-20-0, START ADDING SAND FOR GRADE CONTROL AT ABOUT 100# PER HOUR UNTIL THE FIRST GRADE COMES BACK THEN ADJUST THE AMOUNT OF SAND ACCORDING TO THE GRADE

37.	At this point plant is in normal operation.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND OF THE AMMONIA VAPORIZER

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform an Initial Start-Up Of The Ammonia Vaporizer.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Wrenches and valve wrenches.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as		

required		

TASKS:

1. Opening and closing valves

Steps		Key Points	PPE/Hazards
1.	Close the bleed block valve (1" globe valve) and install the plug (1" plug) by the valve (3" globe valve) to the ammonia vaporizer.	"A" operator will perform this task.	
2.	Close the liquid ammonia valve (3" globe valve) to the ammonia vaporizer.	"A" operator will perform this task.	
3.	Close the bleed valve (1" globe valve) on the incoming line by the liquid ammonia auto controller to the ammonia vaporizer.	"A" operator will perform this task.	
4.	Close the liquid ammonia drain valve (1" globe valve) from ammonia vaporizer to the R/G scrubber.	"A" operator will perform this task.	
5.	Close the drain valve (¾" ball valve) on the suction line to the ammonia vaporizer condensate circulation pump.	"B" operator will perform this task.	
6.	Open the condensate suction valve (10" knife gate valve) to the ammonia vaporizer condensate circulation pump.	"B" operator will perform this task.	
7.	Close the condensate flush line valve (2" ball valve) from the inline screen to the R/G scrubber.	"B" operator will perform this task.	
8.	Fill the condensate tank with fresh water by removing the inspection door on top of the ammonia vaporizer and put a water hose inside.	"B" operator will perform this task.	
9.	Set the ammonia vaporizer condensate auto circulation controller for the desired flow rate. (Set for 300 gpm)	"A" operator will perform this task.	
10.	When the condensate tank is approximately 80% full, shut the fresh water hose off and reinstall the inspection door.	"B" operator will perform this task.	
11.	Open the 125# steam valve (3/4" gate valve) to the condensate tank heater to start heating the water in the condensate tank.	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
12.	Set the condensate auto level controller for the desired level in the condensate tank.	"A" operator will perform this task.	
13.	Open the ammonia vaporizer start-up steam manual valve (6" gate valve)	"B" operator will perform this task.	
14.	Set the manual start-up steam controller at the desired set point.	"A" operator will perform this task.	
15.	Verify that the ammonia vaporizer is ready for service.	"A" operator will perform this task.	

NOTE

AFTER STARTING THE CONDENSATE PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

16.	Start the condensate tank pump to circulate the water in the condensate tank.	"A" operator will perform this task.	
17.	Set the auto pressure controller at desired set points.	"A" operator will perform this task.	
18.	Start an ammonia pump.	"A" operator will perform this task. Refer to the procedure Starting an Ammonia Pump	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND OF THE DRY SYSTEM

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform A Start-Up After Turn Around Of The Dry Side.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as required.**		• **The scrubber system must be in operation before the dry system can be started.**

TASKS:

1. Opening and closing valves.
2. Starting equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the scrubber system is in service.	"A" operator will perform this task.	
2.	Start the #13 conveyor	"A" operator will perform this task.	
3.	Put the dry purge air compressor is service by pushing the start button on the compressor.	"C" operator will perform this task.	
4.	Push the run button on air dryer units	"C" operator will perform this task.	
5.	Open the valve (11/2"ball valve) from air tank to the drying units	"C" operator will perform this task.	
6.	Open the inlet valve (1" ball valve) from the air tank to the drying units	"C" operator will perform this task.	
7.	Open the discharge valve (1" ball valve) from the drying units to the bag house.	"B" operator will perform this task.	
8.	Put the bag house in service.	"B" operator will perform this task. Refer to the procedure Putting the vent bag house in service.	
9.	Start the Bulk Flow Cooler Fan.	"B" operator will perform this task. Refer to the procedure Starting the Bulk Flow Cooler Fan	
10.	Start the dryer cyclone screws.	"A" operator will perform this task.	
11.	Start the vibrating screens.	"A" operator will perform this task.	
12.	Start the cage mills.	"A" operator will perform this task.	

	Steps	Key Points	PPE/Hazards
13.	Start a fire in the dryer furnace.	"B" operator will perform this task. Refer to the procedure Lighting the dryer fire burners.	
14.	Start the #37 conveyor.	"A" operator will perform this task.	
15.	⇒ Click on the dry system start button This will systematically start: ⇒ #70 screw. ⇒ Transfer conveyor. ⇒ Primary elevator. ⇒ Dryer discharge conveyor. ⇒ Dryer. Recycle elevator. ⇒ #2 drag flight. ⇒ #1 drag flight.	"A" operator will perform this task.	

NOTE

THE GRANULATOR IS NOT INTERLOCKED WITH ANY OTHER PIECE OF EQUIPMENT AND MUST BE STARTED AT THE LOCAL STATION, EITHER THE "B" OR THE "C" OPERATOR CAN START THE GRANULATOR.

16.	Start the granulator.	"B" operator can perform this task.	
17.	Start the fines bin conveyor.	"A" operator will perform this task.	
18.	Start the #28 conveyor.	"A" operator will perform this task.	
19.	Start the cooler discharge conveyor.	"A" operator will perform this task.	
20.	Start the ribbon blender.	"A" operator will perform this task.	
21.	Start the cooler feed conveyor.	"A" operator will perform this task.	
22.	Start the product weigh conveyor.	"A" operator will perform this task.	
23.	Put the bulk flow cooler in service.	"B" and "C" operator will perform this task.	

Steps		Key Points	PPE/Hazards
24.	Close the drain valve (1" ball valve) on the suction side of the pump.	"C" operator can perform this task.	
25.	Close the drains valve (¾" ball valve) on the bottom header line to the bypass line.	"B" operator will perform this task.	
26.	Close the valve (2" ball valve) on the return line to the PPA cooling basin.	"C" operator will perform this task.	
27.	Open the valve (6" butter fly valve) on the line coming from the cooling basin.	"C" operator will perform this task.	
28.	Open the valve (6" butterfly valve) on the return line to the cooling basin.	"C" operator will perform this task.	
29.	Open the valve (6" butterfly valve) suction valve to the cooling water booster pump.	"C" operator will perform this task.	
30.	Open the discharge valve (6" butterfly valve) from the cooling water booster pump to the bulk flow cooler.	"C" operator will perform this task.	
31.	Open the inlet valve (6" butterfly valve) to the bulk flow cooler	"B" operator will perform this task.	
32.	Open the valve (6" butterfly valve) out let valve from the bulk flow cooler to the return line.	"B" operator will perform this task.	
33.	Set the temperature auto control valve to Bulk flow cooler for desired temp.	"A" operator will perform this task.	
34.	Verify that the pump packing water is set for desired flow rate.	"C" operator will perform this task.	

Steps	Key Points	PPE/Hazards

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISE.

35.	Start the cooling water booster pump.	"A" operator will perform this task.	
36.	At this point dry system is ready for operation.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND OF THE DRYER SCRUBBER SYSTEM

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform Initial Start-Up Of The Dryer Scrubber System.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Wrenches and a hammer.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required.		

TASKS:

1. Opening and closing valves.
2. Installing blank.

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber and the dryer scrubber pump tank are clean and ready to be put in service.	"A" operator will perform this task.	
2.	Verify that the level indicator on the dryer scrubber pump tank is ready for service.	"A" operator will perform this task.	
3.	Put the blanks on the primary pot (both north and south sides)	"C" operator will perform this task.	
4.	Prepare a dryer scrubber transfer pump for start-up.	"C" operator will perform this task.	
5.	Open the dryer circulation pump discharge valve to the dryer scrubber header. (6" plug valve)	"C" operator will perform this task. Refer to the procedures on Preparing the dryer scrubber transfer pumps for start-up (North or South)	
6.	Open the 4 valves on the dryer scrubber header. (2" diaphragm valves)	"B" operator will perform this task.	
7.	Close the ammonia valve (2" ball valve) to the dryer scrubber.	"B" operator will perform this task.	
8.	Open the instrument air valve to the pressure drop indicator (1" ball valve)	"B" operator will perform this task.	
9.	Open the packing water valve to the dryer scrubber circulation pump to the desired flow rate. (1/2" ball valve)	"C" operator will perform this task.	
10.	Close the sulfuric acid valve (2" gate valve) on the drain line to the floor.	"B" operator will perform this task.	
11.	Close the sulfuric valve (2" gate valve) on the incoming line.	"B" operator will perform this task.	
12.	Close the sulfuric acid valve (2" gate valve) to the preneutralizer tank.	"B" operator will perform this task.	
13.	Close the sulfuric acid valve (2" plug valve) to the dryer scrubber pump tank.	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
14.	Close the sulfuric acid valve (3/4" plug valve) going to the R/G scrubber pump tank.	"B" operator will perform this task.	
15.	Close the pond water valve (2" ball valve) to the preneutralizer tank.	"B" operator will perform this task.	
16.	Open the Fertilizer Feed Stock valve to the scrubber system. (2" plug valve)	"B" operator will perform this task.	
17.	Verify that the auto controller acid to the scrubber pump tanks is ready for service.	"A" operator will perform this task.	
18.	Verify that the dryer scrubber circulation pump flow controller is set for the desired flow	"A" operator will perform this task.	
19.	Call PPA and have them start the Fertilizer Feed Stock to the scrubbers.	"A" operator will perform this task.	
20.	After the Fertilizer Feed Stock flow has been established, put the auto controller in auto and set it for the desired flow rate.	"A" operator will perform this task.	

NOTE

AFTER STARTING THE CIRCULATION PUMP CHECK FOR VIBRATION AND ABNORMAL NOISE.

21.	When the level in the dryer scrubber pump tank reaches the desired level, start the dryer scrubber circulation pump.	"A" operator will perform this task.	
22.	Close the dryer fan dampers.	"A" operator will perform this task.	

NOTE

THE DRYER FAN MUST BE STARTED AT LOCAL STATION. BUTTON SHOULD BE HELD IN FOR APPROXIMATELY 30 SEC

23.	Start the dryer scrubber fan and set the dampers for the desired amps on the fan.	"B" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND OF THE WASTEWATER SYSTEM

Granulation "A"Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Start-Up After Turn Around Of The Wastewater System.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Work gloves** • **Hearing protection as**		

required.		

TASKS:

1. Opening and closing valves.

Steps		Key Points	PPE/Hazards
1.	Verify that the wastewater tank is clean and ready to be put in service.	"C" operator will perform this task.	
2.	Verify that the level controller is set for the desired level in wastewater tank.	"A" operator will perform this task.	
3.	Close the drain valve (1" plug valve) on the suction line to the wastewater pump.	"C" operator will perform this task.	
4.	Open the wastewater pump discharge valve (6" plug valve).	"C" operator will perform this task.	
5.	Open the pump suction valve (6" plug valve).	"C" operator will perform this task.	
6.	Open the valve (6" plug valve) to the pond water return line.	"C" operator will perform this task.	
7.	Close the bypass valve (6" butterfly valve) around auto controller.	"C" operator will perform this task.	
8.	Close the wastewater and pond water to the preneutralizer tank valves (3" plug valve and 2" diaphragm valve)	"C" operator will perform this task.	
9.	Open the circulation line valve (3" plug valve) back to the wastewater tank.	"C" operator will perform this task. Open this valve about ¼ of the way.	
10.	Open the pressure gauge valve (1" plug valve) on the discharge side of pump.	"C" operator will perform this task.	
11.	Verify that both floor sumps ready for service.	"C" operator will perform this task.	
12.	Open the pond water (2" ball valve) or raw water valve (2" plug valve) to the wastewater tank valve	"C" operator will perform this task.	

Steps		Key Points	PPE/Hazards
13.	When the level in the wastewater tank reaches the desired level, close the pond water valve to the wastewater tank.	"C" operator will perform this task.	

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISE.

14.	Start the wastewater pump	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

START-UP AFTER TURN AROUND OF THE GRANULATOR SCRUBBER SYSTEM

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Wrenches and a hammer.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required.		

TASKS:

1. Opening and closing valves.
2. Installing blanks.

Steps		Key Points	PPE/Hazards
1.	Verify that the granulator scrubber and the granulator scrubber pump tank are clean and ready to be put in service.	"A" operator will perform this task.	
2.	Verify that the level indicator on the granulator scrubber pump tank is ready for service.	"A" operator will perform this task.	
3.	Put both blanks on the granulator scrubber pump tank primary pot. (East and west sides)	"C" operator will perform this task.	
4.	Prepare a preneutralizer transfer pump for start-up.	"C" operator will perform this task. Refer to the procedures on Preparing Preneutralizer transfer pump for start-up. (East and West)	
5.	Close the drain valve (1" plug valve) on the granulator scrubber circulation pump suction line.	"C" operator will perform this task.	
6.	Open the valve (1" plug valve) to the discharge line pressure gauge.	"C" operator will perform this task.	
7.	Open the pump discharge valve (6" diaphragm valve) to the granulator scrubber.	"B" operator will perform this task.	
8.	Open the valve (4" diaphragm valve) on the line going to the granulator duct.	"B" operator will perform this task.	
9.	Close the ammonia valve (2" ball valve) going to the R/G scrubber.	"B" operator will perform this task.	
10.	Verify that the pressure drop indicator is ready for service by opening the instrument airline block valves (3/8" ball valves) on the inlet and discharge sides.	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
11.	Open the granulator scrubber circulation pump packing water valve to the desired flow rate.	"C" operator will perform this task.	
12.	Verify that the auto level control valve is ready for service to the granulator scrubber pump tank.	"A" operator will perform this task.	
13.	Verify that the auto controller acid to the scrubber pump tanks is ready for service.	"A" operator will perform this task.	
14.	Close the granulator scrubber fan dampers.	"A" operator will perform this task.	
15.	Start the granulator fan-bearing oiling system is in service.	"C" operator will perform this task.	
16.	Verify that the level controller is set for the desired level in the granulator scrubber pump tank.	"A" operator will perform this task.	

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISE.

17.	When the level in the granulator scrubber pump tank reaches the desired level, start the granulator scrubber-circulating pump.	"A" operator will perform this task.	
18.	Start the granulator scrubber fan and set the dampers for the desired amps.	"A" operator will perform this task.	

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISE.

19.	Start the preneutralizer transfer pump that is ready for service and circulate to the dryer scrubber pump tank.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

NORMAL START-UP FOR MAP with BACK TITRATION

Granulation "A" Operator-01
8/10/04
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform a Normal Start-Up Of MAP.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.**		• **The scrubber system must be in service to collect all dust and ammonia.** • **All vent and bleed valve must be closed.**

TASKS:

1. Opening and closing valve.
2. Starting and shutting down equipment.

Steps		Key Points	PPE/Hazards
1.	Verify that the scrubber system is in normal operation.	"A" operator will perform this task.	
2.	Verify that the ammonia system is ready for service.	"A" operator will perform this task.	
3.	Verify that the dry system is in operation.	"A" operator will perform this task.	
4.	Verify that the Back Titration system is ready for service. Confirm all bleeds are closed and appropriate block valves are open/closed.	"B" operator will perform this task.	
5.	Open the manual start-up steam controller to the desired set point and start heating condensate in the condensate collection tank.	"A" operator will perform this task.	
6.	Verify that the preneut-tank (3" plug valve) drain valve is closed.	"C" operator will perform this task.	
7.	Verify that the slurry circulation pump is ready for service.	"C" operator will perform this task. Refer to the procedures Preparing slurry feed pumps for start-up. (North or South)	
8.	Verify that the Pipe Cross Reactor slurry feed pump is ready for service.	"C" operator will perform this task. Refer to the procedures Preparing the Pipe Cross Reactor Feed Pumps for Service	
9.	Verify that the drain valve (3" plug valve) is closed on Pipe Cross Reactor.	"B" operator will perform this task.	
10.	Start a fire in the dryer furnace.	"B" operator will perform this task. Refer to the procedure Lighting the Dryer Furnace Burners.	

Steps		Key Points	PPE/Hazards
11.	Increase the set point on fuel gas to the dry furnace temperature controller for the desired temperature.	"A" operator will perform this task.	
12.	Call the phos acid plant and have them start a 42% acid pump.	"A" operator will perform this task.	
13.	When the indicator shows a flow of acid to the preneutralizer tank, put the auto flow controller in the auto position and enter the set point for the desired flow rate.	"A" operator will perform this task.	
14.	Set the slurry circulation VFD (variable frequency drive) at 85%.	"A" operator will perform this task.	

NOTE

AFTER STARTING PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES.

15.	Monitor the level in the preneutralizer tank by the level indication, when the tank reaches the desired level start the slurry circulation and the Pipe Cross Reactor feed pumps that are ready for service.	"A" operator will perform this task.	
16.	When the level in the preneut-tank reaches the desired level by the level indicator open the liquid ammonia valve (3" globe valve) to the ammonia vaporizer	"B" operator will perform this task.	
17.	Open the vapor ammonia valve (8" globe valve) to the preneut-tank.	"B" operator will perform this task.	
18.	Put the vapor ammonia to the preneut-tank auto flow controller in auto and enter the desired set point.	"A" operator will perform this task.	
20.	When the ammonia vaporizer pressure and the temperature reaches the desired levels, close the start-up steam manual valve.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
21.	As the gravity comes up on the preneutralizer tank slurry, start the scrubber liquor from the granulator scrubber pump tank by opening the valve (4" gate valve) on the scrubber acid to the preneutralizer tank line and closing the 4" plug valve on the circulation line.	"B" operator will perform these tasks.	
22.	Put the scrubber acid to the preneutralizer tank auto controller in auto and enter the set point for the desired flow rate.	"A" operator will perform this task.	
23.	Open the water to the preneutralizer tank by opening the valve (2" ball valve) by the water filter tank; open the valve (2" diaphragm valve) above the preneutralizer tank. And closing the valve (2" diaphragm valve) going to the scrubber acid circulation line.	"B" operator will perform these tasks.	
26.	Open the automatic 250# steam valve to the Pipe Cross Reactor.	"A" operator will perform this task.	
27.	Monitor the slurry MR. In the preneutralizer tank by running titration.	"B" operator will perform this task.	
28.	When the MR. Reaches .45 to .50, reset the ammonia to the preneutralizer tank and the 42% acid to the preneutralizer tank to maintain the MR.	"A" operator will perform this task.	
31.	Close the 250# steam auto controller to the Pipe Cross Reactor.	"A" operator will perform this task.	
32.	When the preneutralizer tank is charged and ready to go, set the ammonia to the PCR in the cascade mode and set the ratio for the desired ratio.	"A" operator will perform this task.	
33.	Put the slurry to Pipe Cross Reactor in the manual mode.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
34.	Click on the slurry to the granulator button, as the slurry flow indicator starts to indicate a flow, put the slurry controller in the auto position and set it for the desired flow rate.	"A" operator will perform this task.	
35.	Start the cooler discharge belt.	"A" operator will perform this task.	
36.	Start the ribbon blender.	"A" operator will perform this task.	
37.	Start the product weigh belt and put the auto weigh controller in auto and enter the desired set point.	"A" operator will perform this task.	
38.	Put the cooling water auto controller in the auto position and enter the set point for the desired temperature.	"A" operator will perform this task.	
39.	When the ribbon blender has a sufficient load in it, start the dust suppressant.	"A" operator will perform this task.	
40.	As the ph. Comes up in the dryer scrubber and the granulator scrubber pump tank increase the amount of sulfuric acid gong to the dryer scrubber pump tank.	"A" operator will perform this task.	
41.	At this point plant is in normal operation.		
42.	Confirm the granulator is stable.	The bed is smooth/dry in transition.	
43.	Start to increase ammonia to PCR.	Adjust to smell.	
44.	Add tank 21 acid through the spray header.	Start flow at a low rate.	
45.	Confirm the granulator is stable.	The bed is smooth/dry in transition.	
46.	Repeat steps 43, 44 and 45 until desired product has been reached.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.